

Sl. No.	DESCRIPTION	Shape of Bar	Dia of Bar (mm)	Spacing (M)	Nos	Cut Length in (M)	Total Length in (M)					
							10	12	16	20	25	30
	Near By Culvert											
	U-shape											
	Length = 2.30											
	Raft Bottom Bar		16	0.20	1	13	1			67.60		
	Raft Top Bar		16	0.125	1	19	1			77.90		
	Distribution		10	0.20	2	26	1	119.60				
	Inner Wall		12	0.20	2	13	1		57.20			
	outer Wall		12	0.20	2	16	1		86.40			
	Haunch		10	0.20	2	13	1	23.40				
	Distribution		10	0.20	4	9	1	82.80				
	Chairs		12		1	6	1		9.00			
	U Bar		12		2	3	1		6.00			
	Total Length (Rmt)						225.80		158.60	145.50		
	Unit weight of bar						0.617		0.888	1.567	2.469	3.850
	Total quantity in KG						139.320		140.840	228.000		6.310
	Sub quantity						508.16	0.51 Tonne				

GR my 14/12/18
Assistant Engineer
BBMP- SWD, Dasarahalli Zone
Bengaluru

Executive Engineer (SWD)
BBMP- SWD, Dasarahalli Zone
Bengaluru

[Signature]
Assistant Executive Engineer
BBMP- SWD, Dasarahalli Zone
Bengaluru

Work												
Supplying,fixing and placing TMT bar reinforcement in sub-structure complete as per drawing and technical specifications complete as per specifications TMT Bars as per IS 1786 and IS 1786-1												
Directed by the Engineer in charge of the work												
Sl. No.	DESCRIPTION	Shape of Bar	Dia of Bar (mm)	Spacing (M)	No	Cut Length in (M)	Total Length in (M)					
							10	12	16	20	25	32
Near By Culvert												
	U-shape											
	Length = 2.05											
	Left Bottom Bar		16	0.20	1	14	1			75.60		
	Left Top Bar		16	0.125	1	20	1			86.00		
	Distribution		10	0.20	2	25	1	102.50				
	Inner Wall		12	0.20	2	11	1		50.60			
	outer Wall		12	0.20	2	11	1		55.00			
	Runoff		10	0.20	2	14	1	25.20				
	Distribution		10	0.20	4	10	1	82.00				
	Chairs		12		1	6	1		6.00			
	U Bar		12		2	3	1		6.00			
Total Length (Row)							204.70	120.40	143.60			
Unit weight of bar							0.41	0.888	1.58	2.86	3.85	
Total quantity in KG							129.00	107.40	225.25			
Sub quantity							4.87	0.47				

61.00 14/12/18
 Assistant Engineer
 BBMP, SMD, Dasarahalli Zone
 Bengaluru

Executive Engineer (SMD)
 BBMP, SMD, Dasarahalli Zone
 Bengaluru

Assistant Executive Engineer
 BBMP, SMD, Dasarahalli Zone
 Bengaluru



BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 15/12/2018

S.N	Description	Unit	No.	L	B	D	Qty
13	KSRRB M 2100-17.2 : Plain/reinforcement Cement Concrete design mix M25 with OPC cement @340 kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @0.47Cum with superplastisiser @ 3lts confirming to IS9103-1999 Reaffirmed-2008, open foundation complete as per Drawing and Technical Specification with Batching plant, transit mixer and concrete pump. MORTH Specification No. 1500, 1700 & 2100 all leads and lifts as directed by the Engineer in charge of the work.						
	Near by culvert U-shape Drain	CUM					
	At Culvert-1 Side		1	2.05	4.60	0.30	2.83
	At Culvert-1 Side		1	2.30	4.40	0.30	3.04
						Total	5.87



Genu 15/12/18
Assistant Engineer,
SWD Dasarahalli Zone, BBMP.

H S Kumar
Assistant Executive Engineer,
SWD Dasarahalli Zone, BBMP.

BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammgondanahalli in Ward No.12

Measurement recorded on 18/12/2018							
S.N	Description	Unit	No.	L	B	D	Qty
14	KSRRB M 2200-5.12 : Design mix M25 sub structure with OPC cement @340kgs. with 20mm and down size graded metal coarse aggregates @0.7Cum and fine aggregates @0.47Cum with superplastisiser @3lts conforming to IS9103-1999 Reaffirmed-2008 upto 5 mtrs. Upto 5 Mtrs height all leads and lifts as directed by the Engineer in charge of the work (SR2018-19P227/28.7.12)						
	Near by culvert U-shape Drain	CUM					
	At Culvert-1 Side		1	2.05	0.30	1.70	1.05
	At Culvert-1 Side		1	2.30	0.30	1.60	1.10
	Total						2.15

Grand / 18/12/18

Assistant Engineer,

SWD Dasarahalli Zone, BBMP.

Assistant Executive Engineer,

SWD Dasarahalli Zone, BBMP.

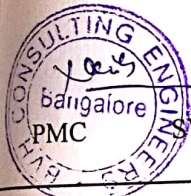


BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 22/12/2018

S.N	Description	Unit	No.	L	B	D	Qty
7	KSSRB M2100-2.1 Earth work in excavation for foundation of structures such as culverts, bridges etc., as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications in Ordinary soil - B. Mechanical Means (i) Depth upto 3m MORTH Specification No. 304 as directed by the Engineer in charge of the work.						
	At Culvert-2 Side		1	2.10	3.90	0.95	7.78
						TOTAL	7.78



Gprwul 22/12/18
Assistant Engineer,
SWD Dasarahalli Zone, BBMP.

[Signature]
Assistant Executive Engineer,
SWD Dasarahalli Zone, BBMP.

Measurement recorded on 22/12/2018

S.N	Description	Unit	No.	L	B	D	Qty
8	KSSRB M2100-5.1 Earth work Excavation for foundation of structures as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications as per MORTH specification No.304 . in Marshy soil upto 3m depth (By manual means) as directed by the Engineer in charge of the work.						
	At Culvert-2 Side		1	2.10	3.90	1.30	10.65
						TOTAL	10.65



Gprwul 22/12/18
Assistant Engineer,
SWD Dasarahalli Zone, BBMP.

[Signature]
Assistant Executive Engineer,
SWD Dasarahalli Zone, BBMP.

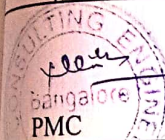
BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 22/12/2018

S.N	Description	Unit	No.	L	B	D	Qty
10	Providing and filling in foundation with Granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift. complete as per specifications as directed by the Engineer in charge of the work.(SR2018-19 P7/2.15)						
	At Culvert-2 Side		1	2.10	3.90	0.30	2.46
						Total	2.46
						Total	26.47
						Deduct Available Stone 30%	-7.94

9.24+8.91+5.87+2.46.



Assistant Engineer,
SWD Dasarahalli Zone, BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone, BBMP.

Measurement recorded on 24/12/2018

S.N	Description	Unit	No.	L	B	D	Qty
12	KSRRB M2100-10 - Plain Cement Concrete M10 with OPC cement @ 220 kgs, with crushed 40mm and down size graded metal coarse aggregates @0.84 Cum and fine aggregates @ 0.56Cum, in foundation mechanically mixed placed in foundation and compacted by vibration including curing for 14 days complete as per specifications MORTH Specification No.2100 all leads and lifts as directed by the Engineer in charge of the work.(SR2018-19 P222/27.18)						
	At Culvert-2 Side		1	2.10	3.90	0.15	1.23
						Total	1.23



Assistant Engineer,
SWD Dasarahalli Zone, BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone, BBMP.

Sl. No.	DESCRIPTION	Shape of bar	Dia of Bar (mm)	Spacing (M)	Nos			Cut Length in (M)	10	12	16	20	25	30
	Neat By Culvert													
	U-shape													
	Length = 2.10													
	Raft Bottom Bar		16	0.20	1	12	1	4.70					56.40	
	Raft Top Bar		16	0.125	1	21	1	3.60					75.60	
	Distribution		10	0.20	2	24	1	2.10	100.80		57.60			
	Inner Wall		12	0.20	2	12	1	2.40			91.20			
	outer Wall		12	0.20	2	12	1	3.80	21.60					
	Haunch		10	0.20	2	12	1	0.90	84.00					
	Distribution		10	0.20	4	10	1	2.10			9.00			
	Chairs		12		1	6	1	1.50			6.00			
	U Bar		12		2	3	1	1.00						
	Total Length (Run)								206.40		163.80		132.00	
	Unit weight of bar								0.617		0.888		1.567	
	Total quantity in Kg								127.350		145.456		206.840	
	Sub-quantity								0.48 Tonne					

479.64

0.47

[Signature]
Assistant Executive Engineer
BBMP- SWD, Dasarahalli Zone
Bengaluru

5.15 Tonne
2.26 Tonne

[Signature] 26/12/18
Assistant Engineer
BBMP- SWD, Dasarahalli Zone
Bengaluru

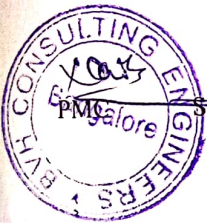
Executive Engineer (SWD)
BBMP- SWD, Dasarahalli Zone
Bengaluru



BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on <u>26/12/2018</u>		Unit	No.	L	B	D	Qty
S.N	Description						
13	KSRRB M 2100-17.2 : Plain/reinforcement Cement Concrete design mix M25 with OPC cement @340 kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @0.47Cum with superplastisiser @ 3lts confirming to IS9103-1999 Reaffirmed-2008, open foundation complete as per Drawing and Technical Specification with Batching plant, transit mixer and concrete pump. MORTH Specification No. 1500, 1700 & 2100 all leads and lifts as directed by the Engineer in charge of the work.						
	At Culvert-2 Side		1	2.10	3.90	0.30	2.46
						Total	2.46



G. N. M. 26/12/18
Assistant Engineer,
SWD Dasarahalli Zone, BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone, BBMP.

BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 22/12/2018

S.N	Description	Unit	No.	L	B	D	Qty
14	KSRRB M 2200-5.12 : Design mix M25 sub structure with OPC cement @340kgs, with 20mm and down size graded granite metal coarse aggregates @0.7Cum and fine aggregates @0.47Cum with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 upto 5 mtrs. Upto 5 Mtrs height all leads and lifts as directed by the Engineer in charge of the work.(SR2018-19P227 /28.7.12)						
	At Culvert-2 Side		1	2.10	0.30	1.80	1.13
						Total	1.13 ✓



BRW / 22/12/18
Assistant Engineer,
SWD Dasarahalli Zone, BBMP.

[Signature]
Assistant Executive Engineer,
SWD Dasarahalli Zone, BBMP.

BRUHAT BENGALURU MAHANAGARA PALIKE

BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on

28/12/2018

Measurement recorded on 28/12/2018		Unit	No.	L	B	D	Qty
S.N	Description						
11	KSRB 2.8 : Providing and Filling in foundation with granite I trap broken metal 100mm (available boulders obtained from dismantling of masonry including charges for breaking into pieces) and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift. complete as per specifications. specification. No. KBS as directed by the Engineer in charge of the work.						
						Available Stones (Culvert)	7.94 ✓
						Total	7.94 ✓



62000/28/12/18
Assistant Engineer,
Dasarahalli Zone, BBMP.

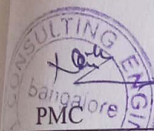

Assistant Executive Engineer,
SWD Dasarahalli Zone, BBMP.

BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 28/12/2018

S.N	Description	Unit	No.	L	B	D	Qty
8	KSSRB M2100-5.1 Earth work Excavation for foundation of structures as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications as per MORTH specification No.304 . in Marshy soil upto 3m depth(By manual means) as directed by the Engineer in charge of the work.						
	Ward Drain						
	1st culvert		1	3.60	0.90	0.90	2.92
	2nd culvert		2	3.60	0.90	0.90	5.83
						TOTAL	8.75



Assistant Engineer,

PMC

SWD Dasarahalli Zone, BBMP.

Assistant Executive Engineer,

SWD Dasarahalli Zone, BBMP.

Measurement recorded on 29/12/2018

S.N	Description	Unit	No.	L	B	D	Qty
12	KSSRB M2100-10 - Plain Cement Concrete M10 with OPC cement @ 220 kgs, with crushed 40mm and down size graded metal coarse aggregates @0.84 Cum and fine aggregates @ 0.56Cum, in foundation mechanically mixed placed in foundation and compacted by vibration including curing for 14 days complete as per specifications MORTH Specification No.2100 all leads and lifts as directed by the Engineer in charge of the work.(SR2018-19 P222/27.18)						
	Ward Drain						
	1st culvert		1	3.60	0.90	0.10	0.32
	2nd culvert		2	3.60	0.90	0.10	0.65
						Total	0.97



Assistant Engineer,

SWD Dasarahalli Zone, BBMP.

Assistant Executive Engineer,

SWD Dasarahalli Zone, BBMP.

BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 29/12/2018

Description	Unit	No.	L	B	D	Qty
KSRRB M 2100-17.2 : Plain/reinforcement Cement Concrete design mix M25 with OPC cement @340 kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.70Cum and fine aggregates @0.47Cum with superplatiser @ 3lts confirming to IS9103-1999 Reaffirmed-2008, open foundation complete as per Drawing and Technical Specification with Batching plant, transit mixer and concrete pump. MORTH Specification No. 1500, 1700 & 2100 all leads and lifts as directed by the Engineer in charge of the work.						
Ward Drain						
1st culvert		2	3.60	0.90	0.15	0.97
2nd culvert		1	3.60	0.90	0.15	0.49
Total						1.46



Geow/ 29/12/18
Assistant Engineer,

SWD Dasarahalli Zone, BBMP.

[Signature]
Assistant Executive Engineer,

SWD Dasarahalli Zone, BBMP.